

We Claim:

1. In a reading apparatus for scanning and decoding image data encoded in one of a plurality of types of optically encoded indicia, said apparatus being of the type including a read-write random access memory space (RAMS) and at least one erasable read only memory space (EROMS), in combination:
 - scanning circuit including a solid-state image sensor for scanning and storing in said RAMS image data for said optically encoded indicia;
 - decoding circuit for applying a plurality of decoding programs to image data stored in said RAMS to produce decoded data there from;
 - a parameter table, stored in at least one of said memory spaces, for storing a plurality of parameters which specify the permitted operating modes of said reading apparatus, said parameters including:
 - (i) a plurality of code parameters for controlling the decoding programs that may be used by said decoding circuit;
 - (ii) a plurality of scanning-decoding parameters for controlling the scanning and decoding activities of said scanning circuit and said decoding circuit; and
 - processing circuit including a menuing program for changing the parameters of said parameter table, and including a reprogramming program responsive to a program command generated by a data source external to said reading apparatus for reprogramming said apparatus;
 - wherein said menuing program allows a user to modify said parameter table by presenting predetermined menu symbols to said apparatus, and wherein said reprogramming program allows said external data source to control the reprogramming of said apparatus.
2. The apparatus of claim 1 in which said menuing program includes a plurality of menu routines for causing said processing circuit to perform tasks corresponding to menu symbols presented to said apparatus by a user.
3. The apparatus of claim 2 in which said menu routines include at least one menu routine that causes said apparatus to output information relating to said parameter table.
4. The apparatus of claim 2 in which said menu symbols encode menu words of one or two types, a first type including a first op code that calls for changes to said parameter table and a second type including a second op code that calls for the performance of one of said menu routines.
5. The apparatus of claim 1 further including an I/O device through which said apparatus may communicate with said external data source, wherein said external data source comprises a local host processor.

6. The apparatus of claim 1 further including an I/O device through which said apparatus may communicate with said external data source, wherein said external data source comprises a remote host processor that is coupled to said I/O device through a data transmission link.

7. The apparatus of claim 1 wherein said reprogramming includes a loading program for loading an application program from said external data source into said RAMS.

8. The apparatus of claim 7 in which said reprogramming program includes instructions for transferring an application program from said RAMS to said EROM.

9. In a reading apparatus for scanning and decoding image data that is encoded in one of a plurality of types of optically readable indicia, in combination:

scanning circuit for scanning said indicia and generating image data indicative of the data encoded therein;

a parameter memory space for storing a parameter table including a plurality of parameters that define the operating modes of said apparatus;

a menuing memory space for storing a menuing program which enables a user at least to modify said parameter table;

an I/O device through which a data source external to the reading apparatus may transmit reprogram requests and program data to said apparatus;

processing circuit for executing a plurality of decoding programs in an attempt to decode said image data, said processing circuit being programmed to respond to a reprogram request initiated by said external data source and to receive program data communicated by said external data source;

whereby said external data source may modify at least one of said parameter table, said menuing program and said decoding programs.

10. The reading apparatus of claim 9 in which said menuing program allows a user to modify said parameter table by presenting to the reading apparatus optically readable menu symbols selected by the user.

11. The reading apparatus of claim 10 further including a random access memory (RAM) and an erasable read only memory (EROM), in which the parameter table and the menuing program are stored in said (EROM) when the reading apparatus is scanning and decoding data, and in which user selected modification to said parameter table are made by transferring the parameter table to said RAM, modifying the parameter table in RAM, and then transferring the modified parameter table back to said EROM.

12. The reading apparatus of claim 9, further including a random access memory (RAM) and an erasable read only memory space (EROM), in which the parameter table and the menuing program are stored in said EROM when the reading apparatus is scanning and decoding data, and in which parameter and menuing program data transmitted by said external data source are stored in said RAM before being transferred to said EROM.

13. The reading apparatus of claim 12 in which program data received from said external data source is organized into program data blocks, and in which said data blocks are transferred to said EROM on a block by block basis, whereby part of said EROM may be reprogrammed without reprogramming the whole of said EROM.

14. The reading apparatus of claim 13 in which the parts of said EROM that store said program data blocks are erased immediately prior to the time that program data blocks are stored therein.

15. The reading apparatus of claim 9 in which said parameter table includes a plurality of code options that identify the decoding programs that are and are not enabled for use during decoding.

16. The reading apparatus of claim 15 in which said decoding programs form parts of a 1D/2D autodiscrimination program, and in which said reading apparatus is adapted to receive from said external data source program data which modifies at least one of said decoding programs.

17. The reading apparatus of claim 16 in which said parameter table includes parameters specifying which of a plurality of scanning-decoding relationships are to exist between the scanning and decoding activities of said reading apparatus during the execution of said 1D/2D autodiscrimination program.

18. The reading apparatus of claim 9 in which said parameter table includes a plurality of scanning-decoding options that specify the relationships that may exist between the scanning and decoding activities of said apparatus.

19. The reading apparatus of claim 18 in which said scanning-decoding options include at least one tracking option.

20. The reading apparatus of claim 18 in which said scanning decoding options include at least one non-tracking option.

21. The apparatus of claim 1 further including an I/O device through which said apparatus may communicate with said external data source, wherein said external data source comprises a remote host processor that is coupled to said I/O device through a data transmission link.

22. The reading apparatus of claim 18 in which said scanning-decoding options include at least one of a One Shot option and a Repeat Until Done option.

23. The reading apparatus of claim 22 in which said scanning-decoding options include at least one of a Scan On Demand Option and a Skip Scan option.